

IN THE CLAIMS:

Substitute the following claims for the pending claims having the same numbers.

1. (Previously Presented) A safety valve, comprising:
an actuator having an actuator member;
an operating member which is displaced to operate the safety valve; and
a magnetic coupling between the actuator member and the operating member,
wherein the actuator member is a piston which displaces in response to a differential between pressure in a line connected to the safety valve, and pressure in an annulus surrounding the safety valve.
2. (Original) The safety valve according to Claim 1, wherein the operating member is pressure isolated from the piston.
3. (Original) The safety valve according to Claim 1, wherein there are no dynamic seals between pressure acting on the piston and pressure acting on the operating member.
4. (Previously Presented) The safety valve according to Claim 1, wherein a barrier separates pressure acting on the piston from pressure acting on the operating member, and wherein the magnetic coupling translates displacement from the piston to the operating member across the barrier.
5. (Previously Presented) The safety valve according to Claim 1, wherein the magnetic coupling includes at least one first magnetic device operatively associated with

the piston, and at least one second magnetic device operatively associated with the operating member.

6. (Original) The safety valve according to Claim 1, wherein the operating member is an opening prong of the safety valve which opens and closes a flapper.

7. (Original) The safety valve according to Claim 1, wherein the operating member is pressure-balanced.

8. (Previously Presented) The safety valve according to Claim 1, further comprising a flow passage extending axially through the safety valve, pressure in the flow passage being isolated from pressure in the line, without use of a dynamic seal.

9. (Previously Presented) The safety valve according to Claim 1, further comprising a flow passage extending axially through the safety valve, pressure in the flow passage being isolated from pressure in the annulus, without use of a dynamic seal.

10. (Original) The safety valve according to Claim 1, further comprising a flow passage extending axially through the safety valve, without any dynamic seal being exposed to pressure in the flow passage.

11. (Canceled)

12. (Currently Amended) ~~The method according to Claim 11, wherein in the translating step~~ A method of actuating a safety valve, the method comprising the steps of:

displacing an actuator member of the safety valve; and

translating displacement of the actuator member to displacement of an operating member, the translation being performed across a pressure isolation barrier without use of any dynamic seal , a magnetic coupling is being used to fix displacement of the operating member to displacement of the actuator member.

13. (Currently Amended) ~~The method according to Claim 11, wherein in the translating step~~ A method of actuating a safety valve, the method comprising the steps of:

displacing an actuator member of the safety valve; and

translating displacement of the actuator member to displacement of an operating member, the translation being performed across a pressure isolation barrier without use of any dynamic seal , at least one first magnet is being attached to the actuator member and at least one second magnet is being attached to the operating member, magnetic attraction between the first and second magnets causing the operating member to displace with the actuator member.

14. (Original) The method according to Claim 13, wherein in the translating step, a differential exists between pressure surrounding the first magnet and pressure surrounding the second magnet.

15. (Original) The method according to Claim 14, wherein in the translating step, the barrier isolates the pressure surrounding the first magnet from the pressure surrounding the second magnet, without the use of any dynamic seal.

16. (Original) The method according to Claim 13, wherein both the first and second magnets are permanent magnets.

17-29. (Canceled)

30. (Currently Amended) ~~The well tool according to Claim 21, further comprising~~
A well tool, comprising:

an actuator including a piston which displaces in response to a first pressure applied to the piston;

an operating member which displaces to operate the well tool, the operating member having a second pressure applied thereto; and

a magnetic coupling including at least one first magnet attached to the piston and at least one second magnet attached to the operating member ,

displacement of the piston being translated into displacement of the operating member while the first and second pressures are isolated from each other, without the use of any dynamic seal isolating the first pressure from the second pressure.

31. (Previously Presented) The well tool according to Claim 30, wherein each of the first and second magnets is a permanent magnet.

32-37. (Canceled)

38. (Currently Amended) ~~The method according to Claim 37, wherein in the displacing step~~ A method of actuating a well tool in a well, the method comprising the steps of:

displacing an actuator member of the well tool, the actuator member is being exposed to a first pressure , and the well tool having a flow passage for flow of fluid therethrough;

translating displacement of the actuator member to displacement of an operating member by use of a magnetic coupling therebetween, and wherein in the translating step the operating member is being exposed to a second pressure, the first and second pressures being isolated from each other ; and

actuating the well tool in response to displacement of the operating member.

39. (Original) The method according to Claim 38, wherein in the translating step the magnetic coupling translates displacement from the actuator member to the operating member across a rigid pressure isolation barrier between the first and second pressures.

40. (Original) The method according to Claim 38, wherein in the translating step the first and second pressures are isolated from each other without the use of any dynamic seal therebetween.

41. (Original) The method according to Claim 38, wherein in the displacing step the actuator member is exposed to a third pressure, the actuator member displacing in response to a differential between the first and third pressures.

42. (Original) The method according to Claim 41, wherein in the displacing step the first and third pressures are each isolated from the second pressure, without the use of any dynamic seal.

43. (Previously Presented) The method according to Claim 41, wherein in the displacing step the first pressure is pressure in a first line connected to the actuator, and the third pressure is pressure in a second line connected to the actuator.

44. (Previously Presented) The method according to Claim 41, wherein in the displacing step the first pressure is pressure in a first line connected to the actuator, and the third pressure is pressure in an annulus surrounding the well tool.

45. (Previously Presented) The method according to Claim 41, wherein in the displacing step the first pressure is pressure in a first line connected to the actuator, and the third pressure is pressure in a chamber of compressed gas.

46-51. (Canceled)

52. (Previously Presented) A well tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator;

at least one first magnetic device positioned in a first portion of the well tool at a first pressure, and the actuator displacing the first magnetic device;

at least one second magnetic device positioned in a second portion of the well tool at a second pressure, and the well tool being operated in response to displacement of the operating member; and

a pressure barrier isolating the first and second pressures, and displacement of the first magnetic device on a first side of the barrier causing displacement of the second magnetic device on a second side of the barrier.

53. (Previously Presented) The well tool according to Claim 52, wherein the first pressure is pressure in a line connected to the actuator.

54. (Original) The well tool according to Claim 52, wherein the second pressure is pressure in an internal flow passage formed axially through the well tool.

55. (Original) The well tool according to Claim 52, wherein the first pressure is pressure in an annulus surrounding the well tool.

56. (Original) The well tool according to Claim 52, wherein the first pressure is pressure in a chamber containing compressed gas.

57. (Previously Presented) The well tool according to Claim 52, wherein the well tool is a safety valve.

58. (Previously Presented) The well tool according to Claim 52, wherein the well tool is a sliding sleeve valve.

59. (Previously Presented) The well tool according to Claim 52, wherein the well tool is a packer.

60. (Original) The well tool according to Claim 52, wherein the actuator is a rotational actuator, and wherein rotation of the first magnetic device by the actuator causes corresponding rotation of the second magnetic device and operating member.

61. (Original) The well tool according to Claim 52, wherein the operating member is pressure-balanced.

62. (Original) The well tool according to Claim 52, wherein the first pressure is isolated from the second pressure without use of any dynamic seal.

63. (Original) The well tool according to Claim 52, wherein the actuator displaces the first magnetic device in response to a pressure differential in the actuator.

64. (Original) The well tool according to Claim 52, wherein the actuator displaces the first magnetic device in response to operation of a motor in the actuator.

65. (Original) The well tool according to Claim 52, wherein the actuator displaces the first magnetic device in response to a differential between the first pressure and a third pressure applied to the actuator.

66. (Previously Presented) The well tool according to Claim 65, wherein the third pressure is pressure in a line connected to the actuator.

67. (Original) The well tool according to Claim 66, wherein the first pressure is pressure in an annulus surrounding the well tool.

68. (Original) The well tool according to Claim 67, wherein the second pressure is pressure in a tubular string in which the well tool is interconnected.

69. (Previously Presented) The well tool according to Claim 68, wherein the tubular string pressure is isolated from the line pressure and from the annulus pressure, without use of any dynamic seal.

70. (Previously Presented) The well tool according to Claim 52, wherein the actuator displaces the first magnetic device in response to pressure in a line connected to the actuator, the line pressure being isolated from the second pressure.

71. (Previously Presented) The well tool according to Claim 70, wherein the line pressure is isolated from the second pressure without use of any dynamic seal.

72. (Previously Presented) The well tool according to Claim 52, wherein the actuator displaces the first magnetic device in response to a differential between pressure in an annulus surrounding the well tool and pressure in a line connected to the actuator.

73. (Previously Presented) The well tool according to Claim 72, wherein the line pressure and the annulus pressure are isolated from the second pressure without use of any dynamic seal.

74. (Original) The well tool according to Claim 73, wherein the second pressure is pressure in a tubing string in which the well tool is interconnected.

75. (Original) The well tool according to Claim 73, wherein the first pressure is the annulus pressure.

76. (Previously Presented) A safety valve, comprising:

an actuator having an actuator member;

an operating member which is displaced to operate the safety valve; and

a magnetic coupling between the actuator member and the operating member,

wherein the actuator member is a piston which displaces in response to a pressure differential.

77. (Original) The safety valve according to Claim 76, wherein the operating member is pressure isolated from the piston.

78. (Original) The safety valve according to Claim 76, wherein there are no dynamic seals between pressure acting on the piston and pressure acting on the operating member.

79. (Original) The safety valve according to Claim 76, wherein a rigid barrier separates pressure acting on the piston from pressure acting on the operating member, and wherein the magnetic coupling translates displacement from the piston to the operating member across the barrier.

80. (Original) The safety valve according to Claim 76, wherein the magnetic coupling includes at least one first magnetic device attached to the piston, and at least one second magnetic device attached to the operating member.

81. (Original) The safety valve according to Claim 76, wherein the operating member is an opening prong of the safety valve which opens and closes a flapper.

82. (Original) The safety valve according to Claim 76, wherein the operating member is pressure-balanced.

83. (Previously Presented) The safety valve according to Claim 76, further comprising a flow passage extending axially through the safety valve, the flow passage being pressure isolated from the lines, without the use of a dynamic seal.

84. (Original) The safety valve according to Claim 76, further comprising a flow passage extending axially through the safety valve, the flow passage being pressure isolated from the annulus, without the use of a dynamic seal.

85. (Original) The safety valve according to Claim 76, further comprising a flow passage extending axially through the safety valve, without any dynamic seal being exposed to pressure in the flow passage.

86. (Canceled)

87. (Currently Amended) ~~The safety valve according to Claim 86, wherein A~~ safety valve, comprising:

an actuator having an actuator member and a motor which displaces the actuator member;

an operating member which is displaced to operate the safety valve, the operating member is being pressure isolated from the actuator member ; and

a magnetic coupling between the actuator member and the operating member.

88. (Canceled)

89. (Currently Amended) ~~The safety valve according to Claim 86~~ A safety valve, comprising:

an actuator having an actuator member and a motor which displaces the actuator member;

an operating member which is displaced to operate the safety valve; and

a magnetic coupling between the actuator member and the operating member ,

wherein a rigid barrier separates pressure acting on the actuator member from pressure acting on the operating member, and wherein the magnetic coupling translates displacement from the actuator member to the operating member across the barrier.

90-91. (Canceled)

92. (Currently Amended) ~~The safety valve according to Claim 86~~ A safety valve, comprising:

an actuator having an actuator member and a motor which displaces the actuator member;

an operating member which is displaced to operate the safety valve , wherein the operating member is being pressure-balanced ; and

a magnetic coupling between the actuator member and the operating member.

93-96. (Canceled)

97. (Currently Amended) ~~The method according to Claim 96, wherein in the translating step~~ A method of actuating a safety valve, the method comprising the steps of:

displacing an actuator member of the safety valve;

translating displacement of the actuator member to displacement of an operating member, the translation being performed across a pressure isolation barrier without use

of any dynamic seal , a magnetic coupling is being used to fix displacement of the operating member relative to displacement of the actuator member ; and

actuating the safety valve between open and closed positions in response to displacement of the operating member.

98. (Currently Amended) ~~The method according to Claim 96, wherein in the translating step~~ A method of actuating a safety valve, the method comprising the steps of:

displacing an actuator member of the safety valve;

translating displacement of the actuator member to displacement of an operating member, the translation being performed across a pressure isolation barrier without use of any dynamic seal , at least one first magnetic device is being attached to the actuator member and at least one second magnetic device is being attached to the operating member, magnetic attraction between the first and second magnetic devices causing the operating member to displace with the actuator member ; and

actuating the safety valve between open and closed positions in response to displacement of the operating member.

99. (Original) The method according to Claim 98, wherein in the translating step, a differential exists between pressure surrounding the first magnetic device and pressure surrounding the second magnetic device.

100. (Original) The method according to Claim 99, wherein in the translating step, the barrier isolates the pressure surrounding the first magnetic device from the pressure surrounding the second magnetic device, without the use of any dynamic seal.

101. (Original) The method according to Claim 98, wherein both the first and second magnetic devices include permanent magnets.

102-107. (Canceled)

108. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator for displacing an actuator member of the well tool;

an operating member which is displaced to operate the well tool; and

a magnetic coupling between the actuator member and the operating member, the magnetic coupling including first and second magnetic devices, the first magnetic device being connected to the actuator member, and the second magnetic device being connected to the operating member, the first and second magnetic devices are being on opposite sides of a pressure barrier.

109. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator for displacing an actuator member of the well tool;

an operating member which is displaced to operate the well tool; and

a magnetic coupling between the actuator member and the operating member, the magnetic coupling including first and second magnetic devices, the first magnetic device being connected to the actuator member, and the second magnetic device being connected to the operating member, the first and second magnetic devices are being pressure isolated from each other without the use of a dynamic seal.

110. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator for displacing an actuator member of the well tool;

an operating member which is displaced to operate the well tool; and

a magnetic coupling between the actuator member and the operating member, the magnetic coupling including first and second magnetic devices, the first magnetic device being connected to the actuator member, and the second magnetic device being connected to the operating member, the first magnetic device includes including a first series of magnets having polarities opposite to a second series of magnets in the second magnetic device.

111. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator for displacing an actuator member of the well tool;

an operating member which is displaced to operate the well tool; and

a magnetic coupling between the actuator member and the operating member, the magnetic coupling including first and second magnetic devices, the first magnetic device being connected to the actuator member, and the second magnetic device being connected to the operating member, each of the first and second magnetic devices includes including magnets having axially aligned polarities.

112. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator for displacing an actuator member of the well tool;
an operating member which is displaced to operate the well tool; and
a magnetic coupling between the actuator member and the operating member,
the magnetic coupling including first and second magnetic devices, the first magnetic
device being connected to the actuator member, and the second magnetic device being
connected to the operating member, each of the first and second magnetic devices
~~includes~~ including magnets having radially aligned polarities.

113. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;
an actuator for displacing an actuator member of the well tool;
an operating member which is displaced to operate the well tool; and
a magnetic coupling between the actuator member and the operating member,
the magnetic coupling including first and second magnetic devices, the first magnetic
device being connected to the actuator member, and the second magnetic device being
connected to the operating member, each of the first and second magnetic devices
~~includes~~ including magnets having opposing polarity directions, so that the magnets in
each of the first and second magnetic devices are attracted to oppositely directed
polarity magnets in the other of the first and second magnetic devices.

114. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well tool, comprising:

a flow passage for flow of fluid therethrough;
an actuator for displacing an actuator member of the well tool;
an operating member which is displaced to operate the well tool; and

a magnetic coupling between the actuator member and the operating member,
the magnetic coupling including first and second magnetic devices, the first magnetic
device being connected to the actuator member, and the second magnetic device being
connected to the operating member, each of the first and second magnetic devices
~~includes~~ including magnets having opposing polarity directions, so that the magnets in
each of the first and second magnetic devices are repelled by similarly directed polarity
magnets in the other of the first and second magnetic devices.

115. (Currently Amended) ~~The well tool according to Claim 107, wherein~~ A well
tool, comprising:

a flow passage for flow of fluid therethrough;

an actuator for displacing an actuator member of the well tool;

an operating member which is displaced to operate the well tool; and

a magnetic coupling between the actuator member and the operating member,
the magnetic coupling including first and second magnetic devices, the first magnetic
device being connected to the actuator member, and the second magnetic device being
connected to the operating member, each of the first and second magnetic devices ~~has~~
having a magnetic pattern, the magnetic patterns preventing relative displacement
between the first and second magnetic devices.

116. (Original) The well tool according to Claim 115, wherein the magnetic
patterns are produced by varied spacings between magnets in the first and second
magnetic devices.

117. (Original) The well tool according to Claim 115, wherein the magnetic
patterns are produced by varied polarity sequences between magnets in the first and
second magnetic devices.

118. (Original) The well tool according to Claim 117, wherein the varied polarity sequences include alternating magnet polarities in the first and second magnetic devices.

119-120. (Canceled)

121. (Previously Presented) The well tool according to claim 52, wherein the operating member is a closure member of a valve.

122-123. (Canceled)

124. (Previously Presented) The well tool according to Claim 57, wherein the operating member is an opening prong of the safety valve.

125-130. (Canceled)

131. (Previously Presented) The well tool according to Claim 58, wherein the operating member is a sliding sleeve of the valve.

132. (Previously Presented) The well tool according to Claim 59, wherein the operating member is a setting mandrel of the packer.

133-146. (Canceled)

147. (Previously Presented) The safety valve according to claim 76, wherein the pressure differential is between pressures in at least two lines connected to the safety valve.

148. (Previously Presented) The safety valve according to claim 76, wherein the pressure differential is between pressure in a line connected to the safety valve and pressure in an internal flow passage of the safety valve.

149. (Previously Presented) The safety valve according to claim 76, wherein the pressure differential is between pressure in a line connected to the safety valve and pressure in an internal chamber of the safety valve.

150-152. (Canceled)

153. (Currently Amended) ~~The method according to claim 152, wherein~~ A method of completing a well, the method comprising the steps of:

positioning a well tool in the well;

displacing an actuator member of the well tool; and

translating displacement of the actuator member to displacement of an operating member of the well tool, the translation being performed across a pressure isolation barrier without use of any dynamic seal, and the translating step is being performed using a magnetic coupling between the actuator member and the operating member.

154-163. (Canceled)

164. (Currently Amended) ~~The method according to claim 152, wherein~~ A method of completing a well, the method comprising the steps of:

positioning a well tool in the well;

displacing an actuator member of the well tool; and

translating displacement of the actuator member to displacement of an operating member of the well tool, the translation being performed across a pressure isolation barrier without use of any dynamic seal, and the translating step further comprises comprising displacing a first magnetic device operatively associated with the actuator member to thereby cause displacement of a second magnetic device operatively associated with the operating member.

165. (Canceled)

166. (Currently Amended) ~~The method according to claim 165, wherein~~ A method of installing a tubular string in a well, the method comprising the steps of:

interconnecting in the tubular string a well tool including an actuator member;

positioning the tubular string in the well; and

translating displacement of the actuator member to displacement of an operating member of the well tool, the translation being performed across a pressure isolation barrier without use of any dynamic seal, and the translating step is being performed using a magnetic coupling between the actuator member and the operating member.

167-176. (Canceled)

177. (Currently Amended) ~~The method according to claim 165, wherein~~ A method of installing a tubular string in a well, the method comprising the steps of:

interconnecting in the tubular string a well tool including an actuator member;
positioning the tubular string in the well; and
translating displacement of the actuator member to displacement of an operating member of the well tool, the translation being performed across a pressure isolation barrier without use of any dynamic seal, and the translating step further comprises comprising displacing a first magnetic device operatively associated with the actuator member to thereby cause displacement of a second magnetic device operatively associated with the operating member.

178. (Canceled)

179. (Currently Amended) ~~The completion string according to claim 178, wherein~~
A completion string for use in a well, the completion string comprising:

a well tool interconnected in the completion string, the well tool including an actuator member and an operating member, displacement of the actuator member being translatable into displacement of the operating member across a pressure barrier without use of any dynamic seal, and the well tool further includes including a magnetic coupling between the actuator member and the operating member.

180-189. (Canceled)

190. (Currently Amended) ~~The completion string according to claim 178, A~~
completion string for use in a well, the completion string comprising:

a well tool interconnected in the completion string, the well tool including an actuator member and an operating member, displacement of the actuator member being translatable into displacement of the operating member across a pressure barrier without use of any dynamic seal, and

wherein a first magnetic device operatively associated with the actuator member causes displacement of a second magnetic device operatively associated with the operating member when displacement of the actuator member is translated into displacement of the operating member.

191. (Canceled)

192. (Currently Amended) ~~The method according to claim 191,~~ A method of completing a well, the method comprising the steps of:

positioning a well tool in the well;

displacing an actuator member of the well tool; and

translating displacement of the actuator member into displacement of an operating member of the well tool using a magnetic coupling between the actuator member and the operating member, and ~~wherein the translating step further comprises performing the translating step across a pressure isolation barrier without use of any dynamic seal.~~

193. (Previously Presented) The method according to claim 192, wherein in the translating step, a pressure differential exists across the pressure isolation barrier.

194. (Currently Amended) ~~The method according to claim 191,~~ A method of completing a well, the method comprising the steps of:

positioning a well tool in the well;

displacing an actuator member of the well tool; and

translating displacement of the actuator member into displacement of an operating member of the well tool using a magnetic coupling between the actuator member and the operating member, and

wherein in the translating step, the actuator member is exposed to a first pressure, and the operating member is exposed to a second pressure different from the first pressure, without use of any dynamic seal therebetween.

195-204. (Canceled)

205. (Currently Amended) ~~The method according to claim 204,~~ A method of installing a tubular string in a well, the method comprising the steps of:

interconnecting in the tubular string a well tool including an actuator member;

positioning the tubular string in the well; and

translating displacement of the actuator member into displacement of an operating member of the well tool using a magnetic coupling between the actuator member and the operating member, and ~~wherein the translating step further comprises performing the translating step across a pressure isolation barrier without use of any dynamic seal.~~

206. (Previously Presented) The method according to claim 205, wherein in the translating step, a pressure differential exists across the pressure isolation barrier.

207. (Currently Amended) ~~The method according to claim 204,~~ A method of installing a tubular string in a well, the method comprising the steps of:

interconnecting in the tubular string a well tool including an actuator member;

positioning the tubular string in the well; and

translating displacement of the actuator member into displacement of an operating member of the well tool using a magnetic coupling between the actuator member and the operating member, and

wherein in the translating step, the actuator member is exposed to a first pressure, and the operating member is exposed to a second pressure different from the first pressure, without use of any dynamic seal therebetween.

208-217. (Canceled)

218. (Currently Amended) ~~The completion string according to claim 217, wherein~~
A completion string for use in a well, the completion string comprising:

a well tool interconnected in the completion string, the well tool including an actuator member, an operating member, and a magnetic coupling, displacement of the actuator member being translatable into displacement of the operating member using the magnetic coupling, and the well tool further ~~includes~~ including a pressure isolation barrier between the actuator member and the operating member, displacement of the actuator member being translatable into displacement of the operating member across the pressure isolation barrier without use of any dynamic seal.

219. (Previously Presented) The completion string according to claim 218, wherein a pressure differential exists across the pressure isolation barrier when displacement of the actuator member is translated into displacement of the operating member.

220. (Currently Amended) ~~The completion string according to claim 217, A~~
completion string for use in a well, the completion string comprising:

a well tool interconnected in the completion string, the well tool including an actuator member, an operating member, and a magnetic coupling, displacement of the actuator member being translatable into displacement of the operating member using the magnetic coupling, and

wherein the actuator member is exposed to a first pressure, and the operating member is exposed to a second pressure different from the first pressure, when displacement of the actuator member is translated into displacement of the operating member.

221-255. (Canceled)

256. (Previously Presented) The safety valve according to claim 4, wherein the barrier is a rigid pressure isolation barrier.

257-274. (Canceled)